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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,522	11/14/2003	Krishnan Chari	85501SLP	9951
70523	7590	12/27/2007	EXAMINER	
Carestream Health Inc, 150 Verona Street Rochester, NY 14608			HAQ, SHAFIQL	
			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/713,522		CHARI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Shafiqul Haq		1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/5/07.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 12-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Status of claims*

1. Claims 1-11 are under active prosecution.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 9-11 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (EP 1127707 A1).

Chen et al. disclose a coating composition comprising a dye-containing polymeric latex and gelling agent (e.g. gelatin) (see claims 1 and 5) and at least one of the nickel metallized dye of the reference (see paragraph [0025]) is the same as the dyes (formula (I) and formula (II)) of instant application when in the compound of formula (I),  $R_1, R_2 = H$  and  $R_3 = \text{alkoxycarbonyl}$  and in the compound of formula (II),  $R_5 = \text{alkyl}$  and  $R_4 = \text{alkoxycarbonyl}$ .

The only difference between the compound of Chen et al. and the compounds of instant application is the ionized and neutral form of the hydroxyl substitution on the aromatic ring attached to pyridine ring of the compounds. In Chen et al. it is hydroxyl (-OH) group and in the compound of formula (I) and (II), it is displayed as ionized form of hydroxyl ( $-O^-$ ) group. However, whether the hydroxyl group would be in the

state of ionized or neutral form would depend on the pH of the suspension solution. An ionized form would be obvious at a basic pH in which hydrogen ion concentration in the medium is low and Chen et al. disclose suspending the dye in a solution of pH 8.0 (i.e. a basic solution) (see paragraph 0026) adjusted with sodium hydroxide.

Therefore, one of ordinary skill in the art would expect the dye of Chen et al. to be in ionized form ( $-O^-$ ) at the basic pH of 8.0 and therefore, the dye of Chen et al. at the basic pH either anticipates or are obvious over the compounds of Formula (I) or (II) of instant application and the low fluorescent property of the dye would also be obvious as the dyes are the same or are very similar.

As for claims 9-11, Chen et al. disclose the microspheres to be comprised of synthetic polymeric materials (paragraphs [0014-0016]).

With regard to the recitation "for making a protein microarray" in line 1 of claim 1, the recitation has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 195

4. Claims 1-11 are again rejected under 35 U.S.C. 103(a) as being obvious over Qiao et al. (US 5334575) in view of Chen et al (EP 1127707 A1).

The applied reference has a common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Qiao et al disclose a microarray coating composition comprising a gelling agent (column 3, lines 2-5 and column 4, lines 20-41) and microsphere (beads) containing a magenta dye (column 4, lines 42-63 and column 9, lines 27-33). As for claims 6-8, Qiao et al disclose beads size of 1 to 50 microns (column 6, lines 19-25) and as for claims 9-11, Qiao et al also disclose the beads comprising polystyrene (column 9, lines 6-11).

Qiao et al disclose magenta dye but fail to disclose nickel metallized dye of formula (I) and formula (II) of present application.

As discussed above chen et al. disclose a coating composition comprising nickel metalized dyes and the structure of the dye is very similar or same as the dye of instant application. Chen et al. also disclose that the nicked metalized magenta dye is superior to other dyes because the dyes have improved light and dark stability (paragraph [0041]).

Therefore, given the above fact that magenta dye of chen et al. is useful for its improved light and dark stability, it would have been obvious at the time of the invention to a person of ordinary skill in the art to substitute equivalent magenta dye of Chen et al in the coating composition of Qiao et al, with the expectation of obtaining a microarray coating composition with a more stable dye.

With respect to the recitation "for making a protein microarray" in line 1 of claim 1, the recitaion has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 195).

***Response to Argument***

5. Applicant's arguments filed 10/5/07 have been fully considered but are not persuasive to overcome the rejections applied under 35 USC 103.

Applicants' argued that Chen et al. fail to teach or suggest a low fluorescent dye of Formula (I) or (II) as claimed by the instant invention. In page 14 of Remarks page, Applicants have drawn the structure of Chen et al.'s dye and the dye (II) for instant application and argued that the two structures are different without clearly indicating how they are different.

As described in above paragraph 3, the dyes are different only with regard to its ionized and neutral state. As described above, the dyes of Chen et al. is the same as the dyes (formula (I) and formula (II)) of instant application when in the compound of formula (I),  $R_1, R_2 = H$  and  $R_3 = \text{alkoxycarbonyl}$  and in the compound of formula (II),  $R_5 = \text{alkyl}$  and  $R_4 = \text{alkoxycarbonyl}$ . Therefore, only difference between the compound of Chen et al. and the compounds of instant application is the ionized and neutral form of the hydroxyl substitution on the aromatic ring attached to pyridine ring of the compounds. In Chen et al. it is hydroxyl (-OH) group and in the compound of formula (I) and (II), it is displayed as ionized form of hydroxyl ( $-O^-$ ) group. However, whether the hydroxyl group would be in the state of ionized or neutral from would depend on the pH of the suspension solution. An ionized form would be obvious at a basic pH in which hydrogen ion concentration in the medium is low and Chen et al. disclose suspending the dye in a solution of pH 8.0 (i.e. a basic solution) (see paragraph 0026) adjusted with sodium hydroxide. Applicants argued that there is no indication

that adjusting pH would yield the dyes of the instant invention and stated that the reference specifically discloses a solution at a pH of 8.0 and dyes that are distinct from those of the instant invention. Applicants also argued that there is no indication that merely modifying the pH of the solution would yield a dye as claimed by the instant invention. These arguments have not been found persuasive because Applicants fail to address why at pH 8.0 (adjusted with sodium hydroxide), the dyes of Chen et al. would not be able to exist in ionized forms. Instead of providing a clear reasoning as to why at pH 8.0 (adjusted with sodium hydroxide) (as disclosed by Chen et al.), the dye would not exist as ionized form, Applicants merely argued that there is no indication that adjusting the pH would yield the dyes of instant invention.

Paragraph [0025] states:

"The following dyes were used in the Example:"

followed by the structures of different dyes (e.g. Dye 1, Dye 2) and paragraph [0026] states:

"To prepare comparative inkjet ink, 87 mg of control dye 1, 0.15g ----- . The ink pH was adjusted to approximately 8 by the addition of triethanolamine or dilute sodium hydroxide."

Therefore, Chen et al. clearly disclose adjusting pH to 8.0 of the dye solution and control dye and other dyes (e.g. analog of control dye 1 and analog of control dye 2) would be expected to be exposed to similar condition for comparison. The examiner agree that Chen et al. do not indicate that at pH 8.0, the dye would be in ionized



form but Chen et al. disclose suspending the dyes at basic pH of 8.0 and at this pH, the hydroxyl group of the dye would be expected to be in ionized state.

With respect to recitation "low fluorescent dye represented by the formula (I)", the low fluorescence property would be inherent in the ionized form of dye of Chen et al (i.e. at basic pH of 8.0) because, at this basic pH, water-insoluble Dye-1 (analogue of control dye-1) of Chen et al (paragraph [0025]) reads on Formula (II) of instant application. Both the dye have substantially the same structure and are expected to have the same property. MPEP §2112 states "[Where] the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established." In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)(emphasis added).

Regarding the incorporation of claim language "wherein said coating composition is used to make a microarray", it is the examiner's position that this is intended use language. Applicant is reminded that a recitation of the intended use of the claimed invention, i.e. use to make a microarray, must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). The incorporation of the phrase "wherein

Art Unit: 1641

said coating composition is used to make a microarray" would also raise question under 112 second paragraph because its unclear how the compound of formula (I) is used to make the microarray.

In response to applicant's argument for 35 USC 103 rejections, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fines*, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.1992). "The test of obviousness is not whether features of the secondary reference may be bodily incorporated into the primary reference's structure, nor whether the claimed invention is expressly suggested in any one or all of the references, rather the test is what the combined teachings would have suggested to those of ordinary skill in the art." *Ex parte Martin* 215 USPQ 543, 544 (PO BdPatApp 1981).

In this case Qiao et al ('575 patent) disclose a microarray coating composition comprising a gelling agent and microsphere beads containing magenta dye and Chen et al. disclose a nickel metalized magenta dye which is superior to other dyes because the dyes have improved light and dark stability (paragraph [0041]). Since the nickel metallized magenta dye of Chen et al. have added advantage (i.e. improved light and dark stability), it would be obvious to substitute the meganta dye of Qiao et al. with the nickel metallized magenta dye of Chen et al. in the coating

composition of Qiao et al, with the expectation of obtaining a microarray coating composition with a more stable dye., with a reasonable expectation of success. Prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations. The “mere existence of differences between the prior art and an invention does not establish the invention’s nonobviousness.” The gap between the prior art and the claimed invention may not be “so great as to render the [claim] nonobvious to one reasonably skilled in the art.” In determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. Factors other than the disclosures of the cited prior art may provide a basis for concluding that it would have been obvious to one of ordinary skill in the art to bridge the gap. The teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. “[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the combination of references results in a product or process that is more desirable, for example

Art Unit: 1641

because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient.

### ***Conclusion***

6. No claims are allowed.
7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shafiqul Haq whose telephone number is 571-272-6103. The examiner can normally be reached on 7:30AM-4:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 1641

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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